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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,985	12/09/2003	Charles L. Gray JR.	310121.411	5843
34212	7590	05/04/2005	EXAMINER	
SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVENUE SUITE 6300 SEATTLE, WA 98104-7092			LESLIE, MICHAEL S	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/731,985	Applicant(s) GRAY, CHARLES L.	
	Examiner Michael Leslie	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,4-10,13-21,24-27,29 and 30 is/are rejected.
- 7) ☒ Claim(s) 2,3,11,12,22,23 and 28 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/9/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "substantially less" in claim 26 is a relative term which renders the claim indefinite. The term "substantially less" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The difference in surface area between each of the first and second bore areas and the transverse sectional area of the bore has been rendered in definite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Chung et al (5791226).

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Chung et al disclose a valve having a valve body with first and second input ports (ports connected to pump and ports connected to tank, respectively, in Fig. 4) and first and second output ports (rod side and tank side connections, respectively, in Fig. 4), a valve bore, a spool, means for establishing communication between the respective first and second input ports and first and second output ports, the respective first and second input ports and second and first output ports, the second input port and first and second output ports simultaneously, and means for admitting one-way passage of fluid (~6) from the second output port to the first input port (Figs. 3 and 4). The valve further includes first and second pilot chambers at first and second ends of the bore, respectively, the first and second pilot chambers configured to receive differentially pressurized fluid for moving the spool from a centered position to a rightward or leftward position, and also includes first, second, and third input annuli positioned in a leftward, central, and rightward region of the bore, respectively, and wherein the first input pod is in fluid communication with the second annulus of the bore and the second input pod is in fluid communication with the first and third annuli, wherein the spool is configured to return to a centered position when at rest.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung et al in view of Smietana (5197516).

Chung et al disclose a valve as described above with respect to claim 5, but does not disclose the details of the pilot control system.

Smietana discloses a valve having a pilot valve (15), actuated by a solenoid, in fluid communication with the first and second pilot chambers and configured to selectively couple the first and second pilot chambers with a high- or low-pressure fluid source.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the valve of Chung et al by including a pilot valve, actuated by a solenoid, in fluid communication with the first and second pilot chambers and configured to selectively couple the first and second pilot chambers with a high- or low-pressure fluid source as taught by Smietana for the purpose of controlling the valve position.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chung et al in view of Crosser (5138838).

Chung et al disclose a valve as described above with respect to claim 5, but does not disclose the details of the pilot control system.

Crosser discloses first and second pilot valves (31, 32; 37, 38) in fluid communication with the first and second pilot chambers, respectively, of a valve (22; 23) each configured to selectively couple the respective pilot chamber with a high- or low-pressure fluid source.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the valve of Chung et al by including first and second pilot valves

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in fluid communication with the first and second pilot chambers, respectively, of a valve each configured to selectively couple the respective pilot chamber with a high- or low-pressure fluid source as taught by Crosser for the purpose of controlling the valve position.

Claims 10 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung et al in view of Johnson (4204459).

Chung et al disclose a system having a hydraulic motor having first and second input ports, configured to apply torque to an output shaft of the motor in a first direction when a fluid pressure at the first input port exceeds a fluid pressure at the second input port, and configured to apply torque to the output shaft in a second direction when the fluid pressure at the second input port exceeds the fluid pressure at the first input port; and a spool valve (CV) having first and second output ports coupled to the first and second input ports, respectively, and a high-pressure input port (port connected to pump, Fig. 4) and a low-pressure input port (port connected to tank, Fig. 4), the valve configured to selectively couple the high-pressure and low-pressure input ports to the first and second input ports, respectively, or to the second and first input ports, respectively, according to a selected position of a spool of the valve. The system further including a check valve (6) positioned and configured to permit fluid flow into the hydraulic motor from the first input port, and to prevent fluid flow into the hydraulic motor from the second input port, and a high pressure fluid source, coupled to the high pressure input port, in the form of a hydraulic pump driven by an internal combustion engine. Chung et al does not teach that the motor is configured to apply torque to an output shaft of the motor in first and second directions.

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Johnson teaches a system having a hydraulic motor configured to apply torque to an output shaft of the motor in first and second directions (Column 2, Lines 39-45) and a spool valve, wherein the motor operates as a pump when the motor is caused to rotate in opposition to the applied torque.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Chung et al by using a motor configured to apply torque to an output shaft of the motor in first and second directions, wherein the motor operates as a pump when the motor is caused to rotate in opposition to the applied torque as taught by Johnson for the purpose of driving an implement.

In further regard to claim 16, Chung et al as modified teaches a high pressure source coupled to the high pressure input port, but does not teach that the high pressure source is a high pressure accumulator.

Since applicant has not disclosed that having a high pressure accumulator as the high pressure source solves any stated problem or is for any particular purpose above the fact that a high pressure accumulator is an alternative to a hydraulic pump and it appears that the system of Chung et al as modified would perform equally well with a high pressure accumulator as claimed by applicant, it would have been an obvious matter of design choice to modify the system of Chung et al by utilizing a high pressure accumulator as claimed for the purpose of supplying high pressure fluid to the system.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chung et al in view of Johnson as applied to claim 10 above, and further in view of Gray (5887674).

Chung et al as modified above with respect to claim 10 teaches a system having a hydraulic motor and spool valve for directing fluid to the motor, but does not teach that the system includes a vehicle with a plurality of wheels coupled to a drive train, wherein the output shaft of the hydraulic motor is coupled to the drive train of the vehicle.

Gray teaches a system having a hydraulic motor (4) coupled to a drive train of a vehicle having a plurality of wheels.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the system of Chung et al as modified above with respect to claim 10 by including a vehicle with a plurality of wheels coupled to a drive train, wherein the output shaft of the hydraulic motor is coupled to the drive train of the vehicle as taught by Gray for the purpose of applying the motor output.

Claims 21, 24-27, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakeya (4716729) in view of Chung et al.

Kakeya discloses a valve (31) having a valve body with an interior bore, a first valve port configured to be coupled to a fluid source (29) pressurized to a first pressure range, a second valve port configured to be coupled to a fluid source (30) pressurized to a second pressure range lower than the first pressure range, an output port (connected to line 38) configured to carry fluid to a hydraulic device, an input port (connected to line 39) configured to receive fluid from the hydraulic device, and a valve spool axially movable within the bore and configured to selectively channel fluid from the first and second valve ports to the output and input ports, respectively, while in a first position (Left), from the second valve port to both the output and input ports

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while in a second position (Center), and from the second and first valve ports to the output and input ports respectively, while in a third position (Right). The valve further includes first and second hydraulic pilot chambers defined by first and second extreme ends of the bore, respectively, and by first and second ends of the spool, respectively, the first and second pilot chambers configured to receive pressurized fluid to act on the first and second ends of the spool, respectively, wherein the spool is configured to move to the first position in the event that a fluid pressure in the first pilot chamber exceeds a fluid pressure in the second pilot chamber, to move to the third position in the event that the fluid pressure in the second pilot chamber exceeds the fluid pressure in the first pilot chamber, and to move to the second position in the event that the fluid pressure in the first pilot chamber is substantially equal to the fluid pressure in the second pilot chamber, and a surface area of an end face of each of the first and second ends of the spool is less than a transverse sectional area of the bore, wherein the spool is moved to the second position if a malfunction is detected. Kakeya does not teach a check valve configured to permit one-way fluid passage from the input port to the first valve port.

Chung et al teaches a valve having a first valve port coupled to a fluid source pressurized to a first pressure range, a second valve port coupled to a fluid source pressurized to a second pressure range lower than the first pressure range, an output port to carry fluid to a hydraulic device, an input port configured to receive fluid from the hydraulic device, a valve spool (CV) axially movable in the bore to channel fluid from the first and second valve ports to the output and input ports, and a check valve (6) configured to permit one-way fluid passage from the input port to the first valve port.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the valve of Kakeya to include a check valve configured to permit one-way fluid passage from the input port to the first valve port as taught by Chung et al for the purpose of preventing cavitation in the supply line.

Allowable Subject Matter

Claims 2, 3, 11, 12, 22, 23, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents 2809652, 5018935, and 5211015 each disclose valves for directing fluid to motors.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Leslie whose telephone number is (571) 272-4819. The examiner can normally be reached on M-F 8:00am - 4:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ML

April 28, 2005


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